

Missouri Department of Natural Resources

## Total Maximum Daily Load Information Sheet

### Blue River and Indian Creek

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#### Water Body Segment at a Glance:

**County:** Jackson

**Nearby Cities:** Kansas City

**10-digit HUC:** 1030010101

**Impaired segment length (by Water Body ID):**

0417 – Blue River: 4.4 miles

0418 – Blue River: 9.4 miles

0419 – Blue River: 7.7 miles

0420 – Indian Creek: 3.4 miles

0421 – Blue River: 12 miles

**Pollutant:** Bacteria

**Source:** Urban Nonpoint Source



**Scheduled for TMDL development:** 2012

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#### Description of the Problem

##### Beneficial uses of Blue River and Indian Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Secondary Contact Recreation
- Whole Body Contact Recreation (WBID 419-Category A; others-Category B)
- Industrial Uses (WBID 417 and 418 only)

##### Use that is impaired

- Whole Body Contact Recreation and Secondary Contact Recreation (WBID 0419)

##### Standards that apply

- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the *E. coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.

## **Background information and water quality data**

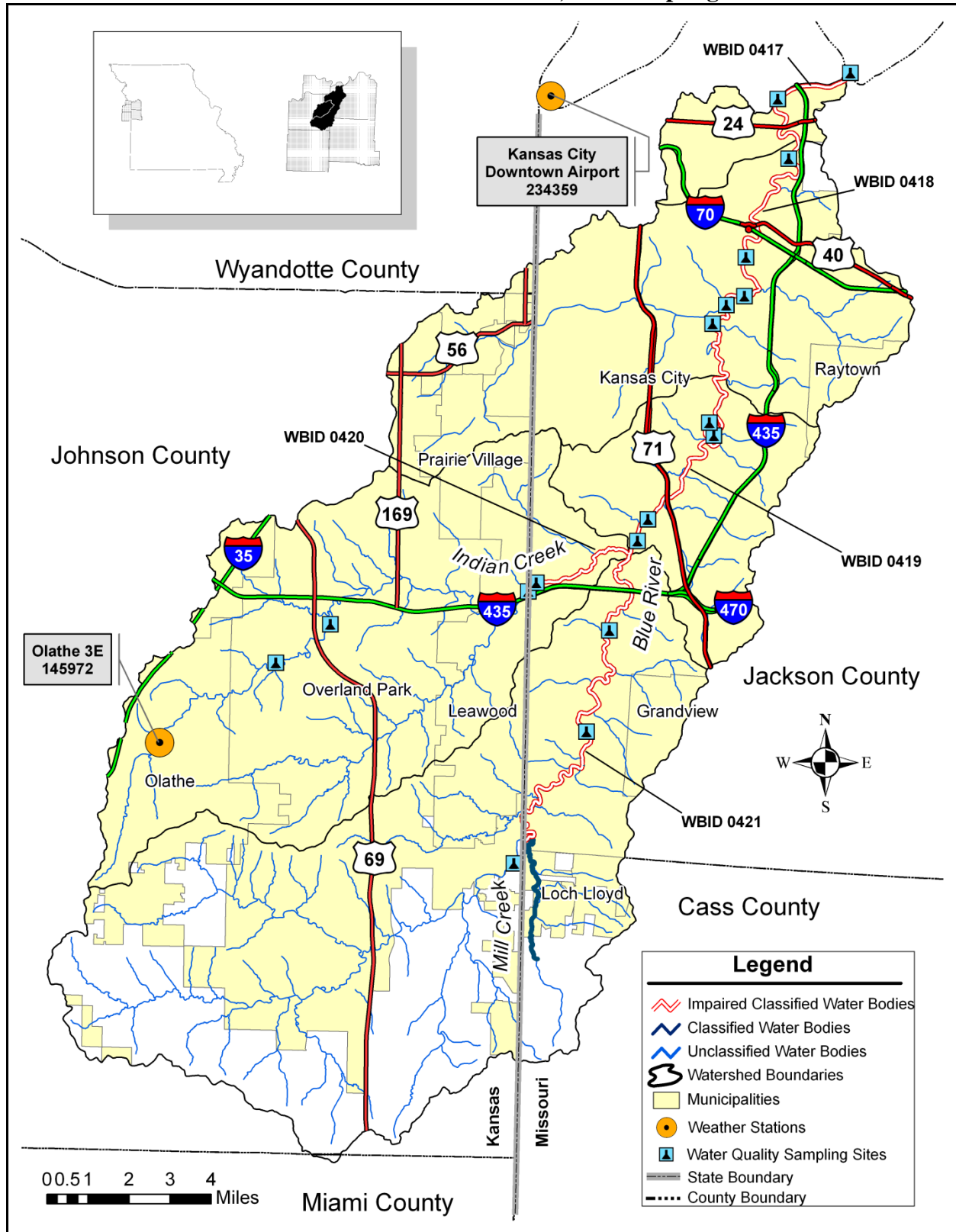
Blue River and Indian Creek are primarily urban water bodies that originate in Johnson County, Kan. and flow through the Kansas City metropolitan area into Missouri. Blue River flows northeast for about 40 miles to its mouth at the Missouri River in Jackson County, Mo. Indian Creek is a tributary to Blue River and flows east about 23 miles from its headwaters to its mouth (see map on next page).

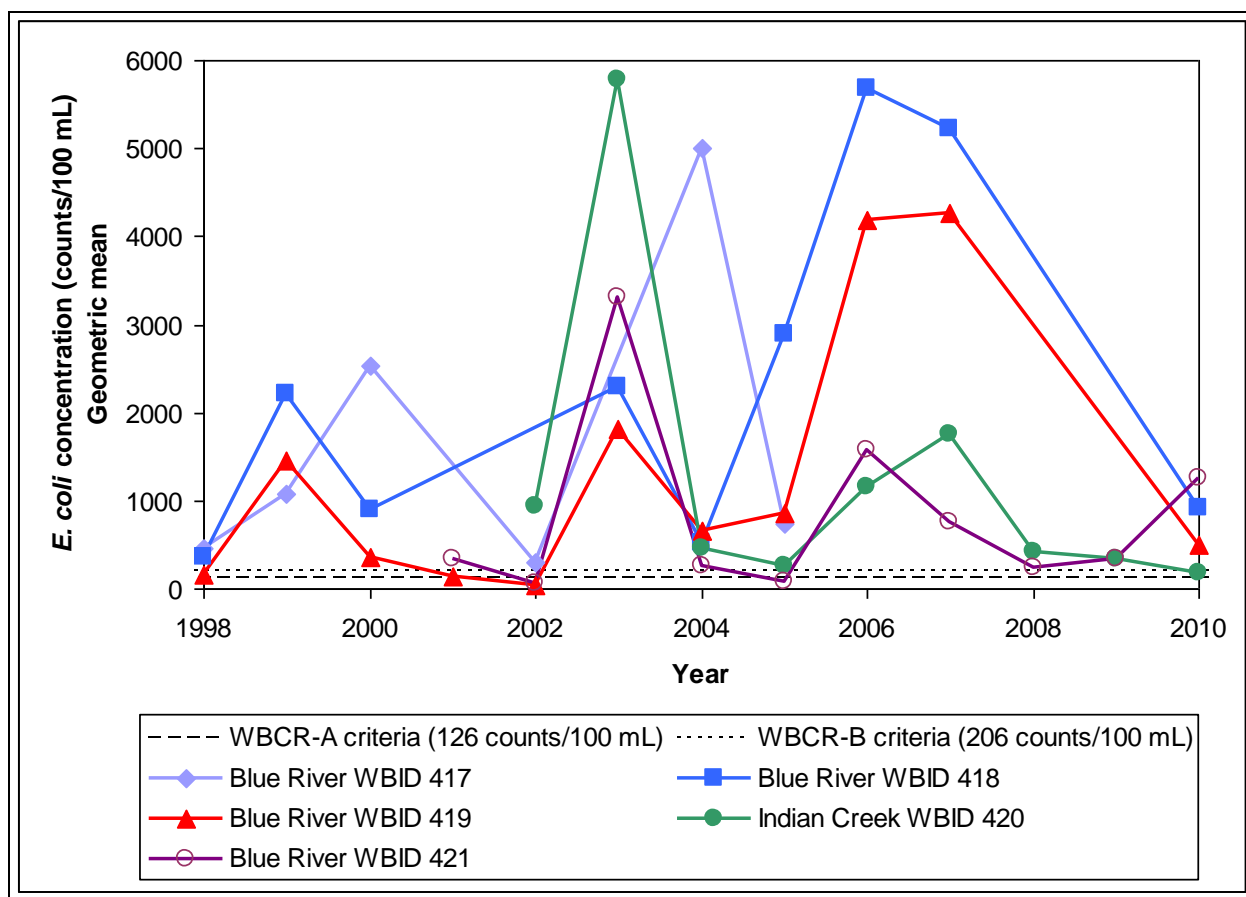
The use impaired by bacteria in this stream is the protection of whole body contact recreation, categories A and B, and secondary contact recreation. Whole body contact recreation includes activities in which there is direct human contact with surface water that results in complete body submergence, thereby allowing accidental ingestion of the water as well as direct contact to sensitive body organs, such as the eyes, ears and nose. Category A waters include water bodies that have been designated as public swimming areas and waters with existing whole body contact recreational uses. Category B applies to waters designated for whole body contact recreation, but are not contained within category A. Secondary contact recreation includes activities where contact with the water is either accidental or incidental and the likelihood of ingesting large quantities of water is minimal. Blue River and Indian Creek are listed as impaired by bacteria on the state's 2010 303(d) List of impaired waters, which was approved by the U.S. Environmental Protection Agency on Oct. 6, 2011.

The Department judges a stream to be impaired by bacteria if the water quality criterion for *E. coli* is exceeded in any of the last three years for which there is adequate data available (minimum of five samples taken during the recreational season). For Blue River and Indian Creek, the geometric mean of recreation season data for each water body segment exceeds the water quality criteria for *E. coli* in almost every year for which there is adequate data (see figure on page 4). Although water body segment 0417 has less than five recreational season samples available for each year of data, this segment was added to the 303(d) List prior to the five-sample requirement and the available data do not show good cause for delisting.

High counts of *E. coli* are an indication of fecal contamination and an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli* are bacteria found in the intestines of warm-blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. Missouri's whole body contact bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The levels of risk correlating to the category A criterion is no more than eight illnesses per 1,000 swimmers in fresh water, and the level of risk correlating to the category B criterion is no more than 10 illnesses per 1,000 swimmers.

# Blue River and Indian Creek watersheds, with sampling site locations





**Blue River and Indian Creek annual recreation season *E. coli* geometric means, 1998 – 2010**

**For more information call or write:**

Missouri Department of Natural Resources

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